SEFSC

Gulf of Mexico:
From April 18 to May 30, 2000, a visual line-transect survey was conducted throughout oceanic and continental slope waters of the U.S. Gulf of Mexico aboard NOAA Ship *Gordon Gunter* (Cruise 007). During the 35 survey days, 4009 transect km were surveyed, resulting in 198 cetacean sightings of at least 19 species. The most commonly sighted species were pantropical spotted dolphins (65 sightings), sperm whales (20 sightings), and bottlenose dolphins (15 sightings). Cetaceans were encountered in all areas surveyed. Bryde's whales were only observed off the Florida Panhandle at an average depth of 206 m. Sperm whales were seen throughout the northern Gulf, but concentrations were observed south of the Mississippi River delta and west of the Dry Tortugas along the Florida Escarpment. Bottlenose dolphins and Atlantic spotted dolphins were predominantly sighted in shelf-edge and upper continental slope waters. Observations were recorded on the prevalence of bite wounds from cookie-cutter sharks (*Isistius* spp.) and presence of remoras on cetaceans. Of 85 groups observed at close enough range to see the crater wounds or healed scars cause by cookie-cutter sharks, 45 groups, representing 10 species, showed evidence of an attack. Remoras were observed in only seven of the 79 cetacean groups assessed. Behavioral responses were recorded for 193 groups, of which 47 groups demonstrated no response to the vessel. Of the 146 groups for which a response was observed, 90 responded by either bow-riding or approaching the ship, 24 groups dove, 14 were observed fleeing the ship, and the other 18 groups exhibited various behaviors. Thirty-eight biopsy samples, representing 10 cetacean species, were obtained during the cruise. Samples were collected from animals riding at the bow of the *Gordon Gunter* and from small boats. The skin and blubber samples were sent to the NOS Charleston (South Carolina) Laboratory for analysis and storage. (Contact: K. Mullin, SEFSC).

From 27 June to 27 July, 2000, a pilot study was conducted to test and/or refine a wide range of sperm research techniques. The study area was located in the northern Gulf of Mexico, south of the Mississippi River delta, between 87.0º W and 91.0º W. This area was specifically targeted because sperm whales have been consistently sighted in this region throughout the year during previous research. The first leg was primarily devoted to attaching acoustic tags to sperm whales. The second leg targeted biopsy, photo-ID, and line-transect techniques incorporating both visual and acoustic surveying. Six acoustic tags were attached to whales, and of the six, three came off within minutes. The other three remained attached for approximately 40 minutes, 90 minutes, and 4.5 hours. Forty-five tissue samples, including 37 biopsy and 8 sloughed skin, were collected. The photo-ID work resulted in over 50 usable photographs of sperm whale flukes. The acoustic array proved to be a very valuable whale tracking tool, and within a week, the array and associated software became the primary tool in keeping the ship in close proximity of a group of whales for over 50 hours. The acoustic array was also used to get the ship into the vicinity of submerged, vocalizing whales. In addition, the array was used to record the vocalizations of sperm whales and other cetaceans. Observations of whale behavior were recorded during every encounter and activity with sperm whales. Many hours were spent observing whales and utilizing the Sperm Count program, which

tracked movements of the whales as well as accepted behavior observations. (Contact: K. Mullin, SEFSC).

From September 5 to October 2, 2000, a visual line-transect survey was conducted throughout continental shelf waters of the U.S. Gulf of Mexico aboard NOAA Ship *Oregon II* (Cruise 242). During the 16 survey days, 1968 transect km were surveyed, resulting in 84 cetacean sightings of at least four species. The most commonly sighted species were bottlenose dolphins (46 sightings) and Atlantic spotted dolphins (11 sightings). Cetaceans were encountered in all areas surveyed. Bottlenose dolphins and Atlantic spotted dolphins were the only species sighted in continental shelf waters (<200 m) except for one sighting of rough-toothed dolphins in 31 m of water. Observations were recorded on the prevalence of bite wounds from cookie-cutter sharks (*Isistius* spp.) on Gulf of Mexico cetaceans. Of the 36 groups observed at close enough range to see the crater wounds or healed scars caused by cookie-cutter sharks, no individuals showed evidence of an *Isistius* attack. Behavioral responses were recorded for 84 groups, of which 37 groups demonstrated no response to the vessel. Of the 47 groups for which a response was observed, 43 responded by either bow-riding or approaching the ship, one group dove, and two groups were observed fleeing the ship. Fifty biopsy samples, representing three species, were obtained during the cruise. The skin and blubber samples were sent to the NOS Charleston (South Carolina) Laboratory for analysis and storage. (Contact: K. Mullin, SEFSC).